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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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PERKINS COIE LLP			ZERVIGON, RUDY	
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SEATTLE, WA 98111-1247			1763	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/687,458	KUBISTA ET AL.	
	Examiner	Art Unit	
	Rudy Zervigon	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/13/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group 1, claims 1-23 in the reply filed on September 6, 2005 is acknowledged.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "first exhaust line", "first collector", "second collector", "first line", "first mainline", must be shown or the features canceled from the claims. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Applicant's claimed "first exhaust line", "first collector", "second collector", "first line", "first mainline", are not detailed in the specification.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 2, 6, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Schmitt; John Vincent et al. (US 6,402,806 B1). Schmitt teaches a system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) for depositing material onto a workpiece ("substrate"; column 1, lines 17-25) in a reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28), the system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) comprising: a gas phase reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28); a

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first exhaust line (between 503 and 509; Figure 5; column 6, line 7 - column 7, line 28) coupled to the reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28); a first trap (501; Figure 5; column 6, line 7 - column 7, line 28) and a second trap (513; Figure 5; column 6, line 7 - column 7, line 28) each in fluid communication with the first exhaust line (between 503 and 509; Figure 5; column 6, line 7 - column 7, line 28), the first and second traps being operable independently to individually and/or jointly collect byproducts from the reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28); and a vacuum pump ("Pump"; Figure 5; column 6, line 7 - column 7, line 28) coupled to the first exhaust line (between 503 and 509; Figure 5; column 6, line 7 - column 7, line 28) to remove gases from the reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28), as claimed by claim 1.

Schmitt further teaches:

- i. The system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) of claim 1 wherein the first exhaust line (between 503 and 509; Figure 5; column 6, line 7 - column 7, line 28) comprises a first branchline (between 503 and 507; Figure 5) and a second branchline (between 503 and 509; Figure 5) each downstream from the reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28), the first trap (501; Figure 5; column 6, line 7 - column 7, line 28) being disposed in the first branchline (between 503 and 507; Figure 5) and the second trap (513; Figure 5; column 6, line 7 - column 7, line 28) being disposed in the second branchline (between 503 and 509; Figure 5), the first and second branchlines being configured in a parallel arrangement, as claimed by claim 2
- ii. The system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) of claim 1 wherein: the first exhaust line (between 503 and 509; Figure 5; column 6, line 7 -

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column 7, line 28) comprises a first branchline (between 503 and 507; Figure 5) and a second branchline (between 503 and 509; Figure 5) each downstream from the reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28), the first trap (501; Figure 5; column 6, line 7 - column 7, line 28) being disposed in the first branchline (between 503 and 507; Figure 5) and the second trap (513; Figure 5; column 6, line 7 - column 7, line 28) being disposed in the second branchline (between 503 and 509; Figure 5); and the system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) further comprises a first valve (505; Figure 5; column 6, line 7 - column 7, line 28) in the first branchline (between 503 and 507; Figure 5) upstream of the first trap (501; Figure 5; column 6, line 7 - column 7, line 28) and a second valve (511; Figure 5; column 6, line 7 - column 7, line 28) in the first branchline (between 503 and 507; Figure 5) downstream of the first trap (501; Figure 5; column 6, line 7 - column 7, line 28), as claimed by claim 6

iii. A system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) for depositing material onto a workpiece ("substrate"; column 1, lines 17-25) in a reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28), the system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) comprising: a low-pressure gas phase reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28); a first line (between 503 and 509; Figure 5; column 6, line 7 - column 7, line 28) coupled to the reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28), the first line (between 503 and 509; Figure 5; column 6, line 7 - column 7, line 28) having a first branchline (between 503 and 507; Figure 5) and a second branchline (between 503 and 509; Figure 5); a first collector (501; Figure 5) disposed in the first branchline (between 503 and 507; Figure 5) and a second collector (513; Figure 5) disposed in

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the second branchline (between 503 and 509; Figure 5); and a vacuum pump ("Pump"; Figure 5; column 6, line 7 - column 7, line 28) coupled to the first line (between 503 and 509; Figure 5; column 6, line 7 - column 7, line 28) to remove gas from the reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28) via the first branchline (between 503 and 507; Figure 5) and/or the second branchline (between 503 and 509; Figure 5), as claimed by claim 7

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3-5, and 8-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmitt; John Vincent et al. (US 6,402,806 B1) in view of Kugimiya; Katsuhisa et al. (US 6,277,763 B1). Schmitt is discussed above. Schmitt further teaches Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) of claim 16 wherein Schmitt's first branchline (between 503 and 507; Figure 5) and Schmitt's second branchline (between 503 and 509; Figure 5) are configured in Schmitt's parallel arrangement, as claimed by claim 17. 21. Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) of claim 20 wherein Schmitt's first branchline (between 503 and 507; Figure 5) and Schmitt's second branchline (between 503 and 509; Figure 5) are configured in Schmitt's parallel arrangement, as claimed by claim 21.

Schmitt does not teach:

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- i. Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) of claim 1 wherein: Schmitt's first exhaust line (between 503 and 509; Figure 5; column 6, line 7 - column 7, line 28) comprises Schmitt's first branchline (between 503 and 507; Figure 5) and Schmitt's second branchline (between 503 and 509; Figure 5) each downstream from Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28), Schmitt's first trap (501; Figure 5; column 6, line 7 - column 7, line 28) being disposed in Schmitt's first branchline (between 503 and 507; Figure 5) and Schmitt's second trap (513; Figure 5; column 6, line 7 - column 7, line 28) being disposed in Schmitt's second branchline (between 503 and 509; Figure 5); and Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) further comprises a throttling valve in Schmitt's second branchline (between 503 and 509; Figure 5) to control Schmitt's flow of byproducts into Schmitt's second branchline (between 503 and 509; Figure 5), as claimed by claim 3
- ii. Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) of claim 1 wherein: Schmitt's first exhaust line (between 503 and 509; Figure 5; column 6, line 7 - column 7, line 28) comprises Schmitt's first branchline (between 503 and 507; Figure 5) and Schmitt's second branchline (between 503 and 509; Figure 5) each downstream from Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28), Schmitt's first trap (501; Figure 5; column 6, line 7 - column 7, line 28) being disposed in Schmitt's first branchline (between 503 and 507; Figure 5) and Schmitt's second trap (513; Figure 5; column 6, line 7 - column 7, line 28) being disposed in Schmitt's second branchline (between 503 and 509; Figure 5); and Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) further comprises a throttling valve in Schmitt's second branchline (between 503 and 509;

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Figure 5) to control Schmitt's flow of byproducts into Schmitt's second branchline (between 503 and 509; Figure 5); Schmitt's pressure monitor (519; Figure 5; column 6, line 7 - column 7, line 28) to determine Schmitt's difference between Schmitt's pressure in Schmitt's first exhaust line (between 503 and 509; Figure 5; column 6, line 7 - column 7, line 28) upstream from Schmitt's first trap (501; Figure 5; column 6, line 7 - column 7, line 28) and Schmitt's pressure in Schmitt's first exhaust line (between 503 and 509; Figure 5; column 6, line 7 - column 7, line 28) downstream from Schmitt's first trap (501; Figure 5; column 6, line 7 - column 7, line 28); and a controller operably coupled to a throttling valve and Schmitt's pressure monitor (519; Figure 5; column 6, line 7 - column 7, line 28) to control Schmitt's flow of byproducts into Schmitt's second branchline (between 503 and 509; Figure 5) to maintain Schmitt's pressure differential in Schmitt's first exhaust line (between 503 and 509; Figure 5; column 6, line 7 - column 7, line 28) within Schmitt's desired range, as claimed by claim 4

iii. Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) of claim 1 wherein: Schmitt's first exhaust line (between 503 and 509; Figure 5; column 6, line 7 - column 7, line 28) comprises Schmitt's first branchline (between 503 and 507; Figure 5) and Schmitt's second branchline (between 503 and 509; Figure 5) each downstream from Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28); Schmitt's vacuum pump ("Pump"; Figure 5; column 6, line 7 - column 7, line 28) comprises Schmitt's first vacuum pump ("Pump"; Figure 5; column 6, line 7 - column 7, line 28) coupled to Schmitt's first branchline (between 503 and 507; Figure 5); and Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) further comprises a second vacuum pump coupled to Schmitt's second branchline (between 503 and 509; Figure 5), as claimed by claim 5

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- iv. Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) of claim 7, further comprising a throttling valve in Schmitt's second branchline (between 503 and 509; Figure 5) to control Schmitt's flow of byproducts into Schmitt's second branchline (between 503 and 509; Figure 5), as claimed by claim 8
- v. Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) of claim 7, further comprising: a throttling valve in Schmitt's second branchline (between 503 and 509; Figure 5) to control Schmitt's flow of byproducts into Schmitt's second branchline (between 503 and 509; Figure 5); Schmitt's pressure monitor (519; Figure 5; column 6, line 7 - column 7, line 28) to determine Schmitt's difference between Schmitt's pressure in Schmitt's first line (between 503 and 509; Figure 5; column 6, line 7 - column 7, line 28) upstream from Schmitt's first collector (501; Figure 5) and Schmitt's pressure in Schmitt's first line (between 503 and 509; Figure 5; column 6, line 7 - column 7, line 28) downstream from Schmitt's first collector (501; Figure 5); and a controller operably coupled to a throttling valve and Schmitt's pressure monitor (519; Figure 5; column 6, line 7 - column 7, line 28) to control Schmitt's flow of byproducts into Schmitt's second branchline (between 503 and 509; Figure 5) to maintain Schmitt's pressure differential in Schmitt's first line (between 503 and 509; Figure 5; column 6, line 7 - column 7, line 28) within Schmitt's desired range, as claimed by claim 9
- vi. Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) of claim 7 wherein: Schmitt's vacuum pump ("Pump"; Figure 5; column 6, line 7 - column 7, line 28) comprises Schmitt's first vacuum pump ("Pump"; Figure 5; column 6, line 7 - column 7, line 28) coupled to Schmitt's first branchline (between 503 and 507; Figure 5); and Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) further comprises

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a second vacuum pump coupled to Schmitt's second branchline (between 503 and 509; Figure 5), as claimed by claim 10

vii. Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) for depositing material onto Schmitt's workpiece ("substrate"; column 1, lines 17-25) in Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28), Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) comprising: Schmitt's gas phase reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28); Schmitt's first exhaust line (between 503 and 509; Figure 5; column 6, line 7 - column 7, line 28) coupled to Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28); Schmitt's trap (either 501 or 513; Figure 5) in Schmitt's first exhaust line (between 503 and 509; Figure 5; column 6, line 7 - column 7, line 28) to collect byproducts from Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28); and Schmitt's first vacuum pump ("Pump"; Figure 5; column 6, line 7 - column 7, line 28) and a second vacuum pump each in fluid communication with Schmitt's first exhaust line (between 503 and 509; Figure 5; column 6, line 7 - column 7, line 28) and downstream from Schmitt's trap (either 501 or 513; Figure 5), the first and second vacuum pumps being operable independently to individually and/or jointly exhaust byproducts from Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28), as claimed by claim 11

viii. Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) of claim 11 wherein Schmitt's first exhaust line (between 503 and 509; Figure 5; column 6, line 7 - column 7, line 28) comprises Schmitt's first branchline (between 503 and 507; Figure 5) and Schmitt's second branchline (between 503 and 509; Figure 5) each downstream from Schmitt's

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reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28), Schmitt's first vacuum pump ("Pump"; Figure 5; column 6, line 7 - column 7, line 28) being coupled to Schmitt's first branchline (between 503 and 507; Figure 5) and a second vacuum pump being coupled to Schmitt's second branchline (between 503 and 509; Figure 5), as claimed by claim 12

ix. Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) of claim 11 wherein: Schmitt's first exhaust line (between 503 and 509; Figure 5; column 6, line 7 - column 7, line 28) comprises Schmitt's first branchline (between 503 and 507; Figure 5) and Schmitt's second branchline (between 503 and 509; Figure 5) each downstream from Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28), Schmitt's first vacuum pump ("Pump"; Figure 5; column 6, line 7 - column 7, line 28) being coupled to Schmitt's first branchline (between 503 and 507; Figure 5) and a second vacuum pump being coupled to Schmitt's second branchline (between 503 and 509; Figure 5); and Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) further comprises a throttling valve in Schmitt's second branchline (between 503 and 509; Figure 5) to control Schmitt's pressure in Schmitt's first exhaust line (between 503 and 509; Figure 5; column 6, line 7 - column 7, line 28), as claimed by claim 13

x. Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) of claim 11 wherein: Schmitt's first exhaust line (between 503 and 509; Figure 5; column 6, line 7 - column 7, line 28) comprises Schmitt's first branchline (between 503 and 507; Figure 5) and Schmitt's second branchline (between 503 and 509; Figure 5) each downstream from Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28), Schmitt's first vacuum pump ("Pump"; Figure 5; column 6, line 7 - column 7, line 28) being coupled to Schmitt's first

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branchline (between 503 and 507; Figure 5) and a second vacuum pump being coupled to Schmitt's second branchline (between 503 and 509; Figure 5); and Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) further comprises--a throttling valve in Schmitt's second branchline (between 503 and 509; Figure 5); Schmitt's pressure monitor (519; Figure 5; column 6, line 7 - column 7, line 28) to determine Schmitt's pressure in Schmitt's first exhaust line (between 503 and 509; Figure 5; column 6, line 7 - column 7, line 28); and a controller operably coupled to a throttling valve and Schmitt's pressure monitor (519; Figure 5; column 6, line 7 - column 7, line 28) to maintain Schmitt's generally consistent pressure in Schmitt's first exhaust line (between 503 and 509; Figure 5; column 6, line 7 - column 7, line 28), as claimed by claim 14

xi. Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) of claim 11 wherein: Schmitt's first exhaust line (between 503 and 509; Figure 5; column 6, line 7 - column 7, line 28) comprises Schmitt's first branchline (between 503 and 507; Figure 5) and Schmitt's second branchline (between 503 and 509; Figure 5) each downstream from Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28); Schmitt's trap (either 501 or 513; Figure 5) comprises Schmitt's first trap (501; Figure 5; column 6, line 7 - column 7, line 28) disposed in Schmitt's first branchline (between 503 and 507; Figure 5); and Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) further comprises Schmitt's second trap (513; Figure 5; column 6, line 7 - column 7, line 28) disposed in Schmitt's second branchline (between 503 and 509; Figure 5), as claimed by claim 15

xii. Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) for depositing material onto Schmitt's workpiece ("substrate"; column 1, lines 17-25) in

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Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28), Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) comprising: Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28); Schmitt's first mainline (503; Figure 5) coupled to Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28), Schmitt's first mainline (503; Figure 5) having Schmitt's first branchline (between 503 and 507; Figure 5) and Schmitt's second branchline (between 503 and 509; Figure 5) each downstream from Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28); Schmitt's first trap (501; Figure 5; column 6, line 7 - column 7, line 28) in Schmitt's first branchline (between 503 and 507; Figure 5) to collect byproducts from Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28); Schmitt's second trap (513; Figure 5; column 6, line 7 - column 7, line 28) in Schmitt's second branchline (between 503 and 509; Figure 5) to collect byproducts from Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28); a throttling valve in Schmitt's second branchline (between 503 and 509; Figure 5); Schmitt's pressure monitor (519; Figure 5; column 6, line 7 - column 7, line 28) to determine Schmitt's difference between Schmitt's pressure in Schmitt's first mainline (503; Figure 5) upstream from Schmitt's first trap (501; Figure 5; column 6, line 7 - column 7, line 28) and Schmitt's pressure in Schmitt's first mainline (503; Figure 5) downstream from Schmitt's first trap (501; Figure 5; column 6, line 7 - column 7, line 28); Schmitt's vacuum pump ("Pump"; Figure 5; column 6, line 7 - column 7, line 28) coupled to Schmitt's first mainline (503; Figure 5); and a controller operably coupled to Schmitt's pressure monitor (519; Figure 5; column 6, line 7 - column 7, line 28) and a throttling valve, a controller having a computer-readable medium containing instructions to perform Schmitt's method comprising--

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exhausting byproducts from Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28) through Schmitt's first mainline (503; Figure 5); and dynamically controlling Schmitt's flow of byproducts into Schmitt's second branchline (between 503 and 509; Figure 5) to maintain Schmitt's pressure differential in Schmitt's first mainline (503; Figure 5) within Schmitt's desired range, as claimed by claim 16

xiii. Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) of claim 16 wherein: Schmitt's first mainline (503; Figure 5) further includes Schmitt's third branchline (between 511 and "Pump"; Figure 5) and Schmitt's fourth branchline (between 517 and "Pump"; Figure 5) each downstream from Schmitt's first and second branchlines; Schmitt's vacuum pump ("Pump"; Figure 5; column 6, line 7 - column 7, line 28) comprises Schmitt's first vacuum pump ("Pump"; Figure 5; column 6, line 7 - column 7, line 28) coupled to Schmitt's third branchline (between 511 and "Pump"; Figure 5); and Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) further comprises a second vacuum pump coupled to Schmitt's fourth branchline (between 517 and "Pump"; Figure 5), as claimed by claim 18.

xiv. Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) of claim 16 wherein a throttling valve comprises Schmitt's first valve (505; Figure 5; column 6, line 7 - column 7, line 28), and wherein Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) further comprises Schmitt's second valve (511; Figure 5; column 6, line 7 - column 7, line 28) in Schmitt's first branchline (between 503 and 507; Figure 5) upstream of Schmitt's first trap (501; Figure 5; column 6, line 7 - column 7, line 28) and a

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third valve in Schmitt's first branchline (between 503 and 507; Figure 5) downstream of Schmitt's first trap (501; Figure 5; column 6, line 7 - column 7, line 28), as claimed by claim 19

xv. Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) for depositing material onto Schmitt's workpiece ("substrate"; column 1, lines 17-25) in Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28), Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) comprising: Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28); Schmitt's first mainline (503; Figure 5) coupled to Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28), Schmitt's first mainline (503; Figure 5) having Schmitt's first branchline (between 503 and 507; Figure 5) and Schmitt's second branchline (between 503 and 509; Figure 5) each downstream from Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28); Schmitt's first trap (501; Figure 5; column 6, line 7 - column 7, line 28) in Schmitt's first branchline (between 503 and 507; Figure 5) to collect byproducts from Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28); Schmitt's second trap (513; Figure 5; column 6, line 7 - column 7, line 28) in Schmitt's second branchline (between 503 and 509; Figure 5) to collect byproducts from Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28); a throttling valve in Schmitt's second branchline (between 503 and 509; Figure 5); Schmitt's pressure monitor (519; Figure 5; column 6, line 7 - column 7, line 28) to determine Schmitt's difference between Schmitt's pressure in Schmitt's first mainline (503; Figure 5) upstream from Schmitt's first trap (501; Figure 5; column 6, line 7 - column 7, line 28) and Schmitt's pressure in Schmitt's first mainline (503; Figure 5) downstream from Schmitt's first trap (501; Figure 5; column 6, line 7 - column 7, line 28); Schmitt's vacuum

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pump ("Pump"; Figure 5; column 6, line 7 - column 7, line 28) coupled to Schmitt's first mainline (503; Figure 5); and a controller operably coupled to Schmitt's pressure monitor (519; Figure 5; column 6, line 7 - column 7, line 28) and a throttling valve, a controller having a computer-readable medium containing instructions to perform Schmitt's method comprising--exhausting byproducts from Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28) through Schmitt's first mainline (503; Figure 5); collecting byproducts in Schmitt's first trap (501; Figure 5; column 6, line 7 - column 7, line 28) in Schmitt's first branchline (between 503 and 507; Figure 5); monitoring Schmitt's difference between Schmitt's pressure in Schmitt's first mainline (503; Figure 5) upstream of Schmitt's first trap (501; Figure 5; column 6, line 7 - column 7, line 28) and Schmitt's pressure in Schmitt's first mainline (503; Figure 5) downstream of Schmitt's first trap (501; Figure 5; column 6, line 7 - column 7, line 28); and regulating a throttling valve in Schmitt's second branchline (between 503 and 509; Figure 5) in response to Schmitt's monitored pressure differential in Schmitt's first mainline (503; Figure 5) to flow byproducts into Schmitt's second branchline (between 503 and 509; Figure 5) to maintain Schmitt's pressure differential in Schmitt's first mainline (503; Figure 5) within Schmitt's desired range, as claimed by claim 20

xvi. Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) of claim 20 wherein: Schmitt's first mainline (503; Figure 5) further includes Schmitt's third branchline (between 511 and "Pump"; Figure 5) and Schmitt's fourth branchline (between 517 and "Pump"; Figure 5) each downstream from Schmitt's first and second branchlines; Schmitt's vacuum pump ("Pump"; Figure 5; column 6, line 7 - column 7, line 28) comprises Schmitt's first vacuum pump ("Pump"; Figure 5; column 6, line 7 - column 7, line 28) coupled to

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Schmitt's third branchline (between 511 and "Pump"; Figure 5); and Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) further comprises a second vacuum pump coupled to Schmitt's fourth branchline (between 517 and "Pump"; Figure 5), as claimed by claim 22

- xvii. Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) of claim 20 wherein a throttling valve comprises Schmitt's first valve (505; Figure 5; column 6, line 7 - column 7, line 28), and wherein Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) further comprises Schmitt's second valve (511; Figure 5; column 6, line 7 - column 7, line 28) in Schmitt's first branchline (between 503 and 507; Figure 5) upstream of Schmitt's first trap (501; Figure 5; column 6, line 7 - column 7, line 28) and a third valve in Schmitt's first branchline (between 503 and 507; Figure 5) downstream of Schmitt's first trap (501; Figure 5; column 6, line 7 - column 7, line 28), as claimed by claim 23
- Kugimiya teaches a wafer processing apparatus (Figure 1; column 2, line 62 - column 3, line 29) including exhaust control apparatus comprising a controller (140) for controlling vacuum pump (136) and a throttle valve (127) for controlling processing chamber pressure (column 3; lines 15-29).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add Kugimiya's exhaust control apparatus to Schmitt's system.

Motivation to add Kugimiya's exhaust control apparatus to Schmitt's system is for controlling to Schmitt's reactor pressure as taught by Kugimiya (column 3; lines 15-29). Further, it is well established that the duplication of parts is obvious (In re Harza , 274 F.2d 669, 124 USPQ 378 (CCPA 1960) MPEP 2144.04).

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Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

US 20040238123 A1

US 20030037730 A1

US 20010012697 A1

US 6807971 B2

US 6770145 B2

US 6663713 B1

US 6383300 B1

US 6334928 B1

US 6328803 B1

US 6159298 A

US 6113698 A

US 6022483 A

US 5902403 A

US 5819683 A

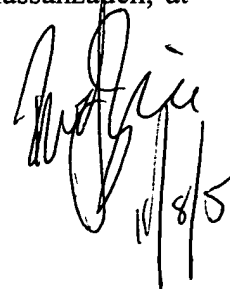
US 5769950 A

US 4313783 A

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Rudy Zervigon whose telephone number is (571) 272.1442. The examiner can normally be reached on a Monday through Thursday schedule from

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8am through 7pm. The official fax phone number for the 1763 art unit is (703) 872-9306. Any Inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Chemical and Materials Engineering art unit receptionist at (571) 272-1700. If the examiner can not be reached please contact the examiner's supervisor, Parviz Hassanzadeh, at (571) 272-1435.



Handwritten signature of Parviz Hassanzadeh, dated 11/8/5.